

harmless The District, its agents or employees, against claims or liability arising from or based upon the violation of any federal, state, county, city or other applicable laws, bylaws, ordinances, or regulations by The Vendor, its agents, associates, or employees.

The indemnification provided above shall obligate The Vendor to defend at its own expense or to provide for such defense, at The District's option, of any and all claims of liability and all suits and actions of every name and description that may be brought against The District which may result from the operations and activities under this Contract whether the installation operations be performed by The Vendor, subcontractor, or by anyone directly or indirectly employed by either.

The award of this Contract to the Vendor shall obligate The Vendor to comply with the foregoing indemnity provision; however, the collateral obligation of insuring this indemnity shall be complied with as set forth.

Comply, with clarification shown above

22. Evaluation of Responses

The District may at its discretion and at no fee to The District, invite any Vendor to answer questions during response evaluation for the purpose of clarifying statements in the response.

Comply

23. Right to Reject

The District reserves the right to accept or reject all proposals or sections thereof. In addition, The District reserves the right to award without further discussion. Therefore, responses should be submitted initially with the most favorable terms that The Vendor can propose.

Comply

24. Cancellation

In the event The Vendor violates provisions of this RFP, The District may give written notice to The Vendor stating the deficiencies and unless deficiencies are corrected within five (5) working days, recommendations shall be made to The District for immediate cancellation. The District reserves the right to terminate immediately any contract resulting from this RFP for failure to correct deficiencies.

Comply

25. Acceptance

Acceptance will occur within 30 days after the final cutover. East St. Louis Public Schools, shall accept the system when per the RFP:

- All equipment and material have been provided and all services are complete, or



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- Mutually agreed upon date has been arranged between East St. Louis Public Schools, and the Vendor for the completion of any outstanding RFP items or the resolution of any outstanding problems.

Comply

-----End of General Specifications-----

VENDOR RESPONSIBILITIES

1. Equipment Locations

All Cisco Equipment shall be install in a specified HUB, MDF, IDF or Classroom equipment rack.

A typical school network diagram is included as Attachment E1

A diagram of the WAN architecture is included as Attachment E2

Comply

2. Accuracy of Proposals

Attachment D contains the complete list of school buildings showing the number of classrooms for each building.

Attachment E contains the complete equipment list for one MDF (Switch, Cache Engine, Router and servers), IDF (Switch), and classroom (switch). The lists are complete including model numbers, options, port types and cables.

Attachment E contains the complete equipment list for HUB at 1005 State Street

~~Vendors are responsible for calculating the correct number of MDF, IDF and Classroom Components for each School.~~

Attachment F contains the complete equipment list and specification for building cable upgrades

~~Attachment G contains complete equipment list for servers (email, etc.)~~

Comply with the exception of Attachment G.

3. Completeness of Installation

Vendors shall assure that vendor's proposal contains all equipment required for all schools and NOC. Vendors shall be responsible for a complete installation of proposed equipment, including cables, connectors, hardware, configuration of network protocols, options and all other parameters necessary for operations with the ESLPS Network.

Vendors shall demonstrate operation of the installed equipment to the satisfaction of the ESLPS Director of technology prior to acceptance.

Comply

DETAILED SYSTEM SPECIFICATIONS

1. Cisco Equipment

All proposed convergence network equipment shall be manufactured by Cisco systems and shall match both in number and function the items listed in Attachment G under the headings Item Name, Part Number and Device Type. *See the previous section on Vendor Responsibilities.*

Vendor shall provide and install all proposed equipment in equipment racks. Location of HUB/MDF/IDF or Classroom to be specified by ESLPS Director of Technology.

Vendor may propose alternative configurations to the specified configuration. Proposals must be clearly marked as ALTERNATIVES and must include specific part numbers, reasons for deviation from the specified configuration and an explanation of the benefits to ESLPS of the proposed change.

Comply with Attachment E (Cisco Equipment for Convergence Network)

2. Cabling

Inspection of Site

Bidders are directed to visit the sites, and to investigate all conditions involved in the execution of the work, to fully acquaint themselves with the plans, specifications and conditions by which the work is to be performed. The Contractor will not be allowed additional compensation for items on which he has failed to inform himself prior to the opening of the bids. Submission of a bid will be construed by the Owner as compliance with this directive.

Permits, Licenses, Inspections and Taxes

The Contractor shall obtain and pay for all necessary permits, licenses and shall give all notices, to pay all taxes and comply with all laws, ordinances, rules and regulations bearing on the work. If the specifications are at variance herewith, the work shall be installed in accordance with local laws, rules, regulations and ordinances provided the standard of work required by ordinance is not less than the requirements of this specification.

Attachment F contains cabling upgrade specifications.

Comply

3. Servers

Servers are to be proposed as specification indicate in the section Server Specifications.

Ameritech No Bids Attachment G (Server Specifications)

4. Installation, Configuration and Testing

ESLPS Director of Technology shall dictate the date and time of each School's installation

Vendor shall configure, test and demonstrate interoperability of all proposed equipment to ESLPS Director of Technology's satisfaction prior to acceptance by ESLPS

Vendor shall work in a cooperative manner with ESLPS Director of Technology to assure a seamless network installation, including interfaces to Wide Area Network Services.

Comply

5. Patch Cables and Additional items

Vendor shall be responsible for providing patch cables and drop cables as well as any and all required hardware, tie wraps and supplies required for a professional installation.

Vendor shall supply and install Fiber Optic and Category 5 patch cables to connect all proposed HUB, MDF and IDF to the system.

Vendor shall supply sufficient Category 5 patch cables to attach end-user workstations to all proposed network ports.

Comply

6. SmartNet Maintenance

All proposed equipment shall include two full years of Cisco SmartNet Onsite maintenance 8x5x4 (8 hours/day, 5 days/week, 4-hour response).

Comply

7. **Project Management**

Within three business days of contract signing, Vendor shall provide ESLPS with the name and contact information of Vendor's Project Manager. Project Manager's duties are described in Item 17 of the General Specifications.

Comply

8. **Documentation**

Vendor shall tag and/or label all proposed equipment in a manner specified by ESLPS Director of Technology. Vendor shall provide complete documentation of the installation, including detailed diagrams, equipment manuals, software documentation sets and configuration logs for all hardware and software.

Comply

9. **On-Site Implementation Support**

Vendor may be required to provide additional implementation services. Technician shall be experienced in Cisco installation and configuration. The District reserves the right to contract for additional hours bundles of on-site implementation assistance prior to contract signing, at the proposed price. Additional duties may include workstation configuration and attachment, Electronic Mail system implementation and other application and network related tasks at the discretion of the ESLPS Director of Technology.

Comply-Ameritech can provide Cisco technical support for additional charge. Workstation configuration and attachment, Electronic Mail system implementation are not available.

----End of Detailed Specifications---

SYSTEM ANALYSIS SUMMARY SHEET
Attachment A

Vendors are to answer the following questions – include additional sheets if necessary.

1. Cisco Equipment

Does the equipment in your proposal exactly
Match that shown in the specifications?

**Yes, All Cisco Equipment proposed matches equipment specifications of
Attachment E.**

If not: describe exceptions

Have you attached a separate page showing the
Part number and unit cost of all Cisco equipment?

Yes, see Section IV, Tab H.

2. Installation

How many technicians will be devoted to this project?

**A staff of approximately 25 engineers and technicians will be dedicated. Additional
support personnel will participate as needed.**

3. Maintenance

Are you a certified repair center for each of the
items in your proposal?

Yes.

Is Telephone Support Available 24 hrs/day?

Yes.

If Not: Availability – Days/Hours

Response time – Major Malfunction

Immediate TAC support, Max. 4 hours on-site for additional fee.

Response time – Minor Malfunction

Immediate TAC support, Max. 4 hours on-site for additional fee.

From where will service be dispatched?

St. Louis and/or Springfield

Where will spare parts be stored?

St. Louis and/or Springfield

Include copy of maintenance agreement

See Tab VIII for sample agreement



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Indicate below the scope of your experience
with the equipment required on this RFP.

		No. of similar systems installed	No. of factory Trained tech.
1.	Cisco 7206 Router	40+	43
2.	Cisco 3640 Router	70+	43
3.	Cisco WSC6509 Switch	7+	43
4.	Cisco Pix 520 Firewall	9+	43
5.	Cisco IPTV3410		
6.	Cisco CE 550 Cache		
7.	Cisco MCS 7830		
8.	Cisco CAG AT8		
9.	Cisco WSC4003S1	50+	43
10.	Cisco WSC3524 XLEN	200+	43

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VENDOR QUALIFICATION STATEMENT

Attachment C

The undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

1. Name, address, principal contact, telephone number, and fax number of Vendor's principal office:

Darryl Branson
529 South 7th Street, Springfield, IL 62721 (Branch Office)
432 White Chapel, O'Fallon, MO 63366 (Teleworker)
PH: 636-219-5155 Fax: 636-219-5156

2. Name, address, principal contact, telephone number, and fax number of Vendor's branch office(s), (if any) from which the project would be serviced:

Project Management -
To be determined once project is awarded based on then current workload.

Maintenance Services -
To be determined once project is awarded based on then current workload.

3. Type of organization:

Corporation X
Partnership
Individual
Joint Venture
Other

4. How many years has your organization been in business as a Vendor or Contractor related to convergence network systems?

Ameritech (Illinois Bell) was incorporated August 24, 1882

5. How many years has your organization been in business under its present business name?

Ameritech (Illinois Bell) was incorporated August 24, 1882

6. Under what other or former name has your organization operated?

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Illinois Bell Telephone Company

7. If branch office would service the project, how many years has the branch office been established?

N/A

8. If your organization is a corporation, list the following:

Date of incorporation: **August 24, 1882**

State of incorporation: **Delaware**

Names and titles of all corporation officers: **See Annual Report at www.sbc.com**

9. If the organization is a partnership, list the following: N/A

Date of organization:

Type of partnership:

Names of general partners:

10. If your organization is individually owned, list the following: N/A

Date of organization:

Name of owner:

11. If the form of your organization is other than those listed above, describe it and name the principals: N/A

12. List the jurisdictions and trade categories in which your organization is licensed, registered, filed, or otherwise qualified to do business. Indicate applicable license or registration numbers. N/A

13. List the categories of work that your organization normally performs with its own forces.

Ameritech has been in the telecommunications business for over 100 years. We are fully capable of handling any type of telecommunications project. We can do everything from Project Management, through design, installation, and maintenance.

14. Provide evidence that your organization is an authorized distributor for all equipment being proposed.

See Cisco Web Site: www@cisco.com

See Section VII. Vendor Profile, Tab B Cisco Gold Partner, Other Attachments



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15. Provide evidence that all technicians that will be working on this project have manufacturer certification for the activities they will be performing.

See Section VII. Vendor Profile, Tab B Cisco Gold Partner, Other Attachments, and Tab C

16. Relative to the proposed project, list the following:

The categories of work or parts of the project you would expect to perform with your own forces:

Ameritech will use its local technicians and engineers to do the majority of the project.

The categories of work or parts of the project you would expect to subcontract to other parties: **Wiring work will be subcontracted to Phone Masters, Limited.**

17. Has your organization ever failed to complete any work awarded to it? (If yes, please attach details.) No.
18. Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers: (If yes, please attach details) **As with any large corporation, there is always on-going litigation. There is no litigation that would in any way affect our ability to complete the performance of this bid.**
19. Has your organization filed any lawsuits or requested arbitration with regard to convergence network project with in the last five years? (If yes, please attach details) **As with any large corporation, there is always on-going litigation. There is no litigation that would in any way affect our ability to complete the performance of this bid.**
20. Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a contract? (If yes, please attach details.) No.
21. On a separate sheet, list major projects your organization has in progress. Include name of project, owner, contract amount, percent complete, percent of the work performed with your own forces, and scheduled completion date.
- Due to the public nature of this proposal, Ameritech feels that this information is proprietary, and will provide this to St. Louis Public Schools under a non-disclosure agreement. Ameritech has the management and technical resources to complete all aspects present in this proposal.**
22. On a separate sheet, list major projects your organization has completed in the past five years. Include the name of project, owner, and completion date.
See Section IV E, attachment B (References)

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23. Identify hardware and software suppliers with whom you plan to work. Provide a statement that you are prepared to assume overall contractual responsibility. You or your suppliers shall either be a direct sales entity or a certified distributor of the systems proposed with documentation to that effect included in your RFP response.

Comply, Ameritech is an authorized Gold Level reseller of Cisco Systems. Ameritech will assume overall contractual responsibility.

24. List at least four (4) trade or industry references. Include address, principal contact and telephone number for each.

See Section IV E, attachment B (References)

25. List at least two (2) bank or financial references. Include address, principal contact and telephone number for each.

**The Bank of New York
P.O. Box 239
Newark, New York 07101-239
Also see Annual Report in binder pocket**

26. List the full name and principal address of your surety bonding company. Also list the name, address and telephone number of the bonding company's agent.

**Safeco Of America, 3637 S. Geyer Road, St. Louis, MO 63127
Safeco Representative: Ms. Ann Gilett**

Dated at 3:00 PM this 27th day of December, 1999

Organization Name: Ameritech

By: 
Darryl P. Branson

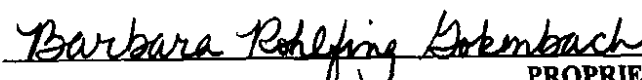
(signature & printed name)

Title: Senior Account Manager

Mr. Darryl P. Branson

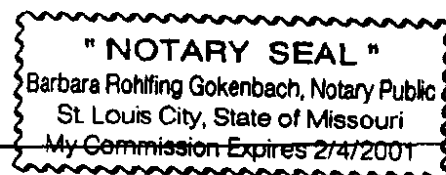
Sworn deposes and says that the information herein is true and sufficiently complete so as not to be misleading.

being duly



PROPRIETARY

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CISCO EQUIPMENT FOR CONVERGENCE NETWORK

Attachment E

Bill Of Materials For Voice, Video and Data Network

HUB ROUTER

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
CISCO7206VXR/300	Cisco Systems Inc.	CISCO7206VXR/300	Routers	1	\$11,050.00
ACS-2500ASYN	Cisco Systems Inc.	ACS-2500ASYN	Cables	2	\$130.00
C7200-IO-FE-BUN(included)	Cisco Systems Inc.	C7200-IO-FE-BUN	RouterPlugins	1	\$0.00
CAB-AC	Cisco Systems Inc.	CAB-AC	Cables	1	\$0.00
CAB-OCT-V35-MT	Cisco Systems Inc.	CAB-OCT-V35-MT	Cables	1	\$487.50
MEM-IO-D-FLC16M(included)	Cisco Systems Inc.	MEM-IO-D-FLC16M	Memory	1	\$0.00
MEM-SD-NPE-256MB	Cisco Systems Inc.	MEM-SD-NPE-256MB	Memory	1	\$2,730.00
NPE-300-BUN(included)	Cisco Systems Inc.	NPE-300-BUN	RouterPlugins	1	\$0.00
PA-8T-V35	Cisco Systems Inc.	PA-8T-V35	Router Piggybacks	1	\$5,200.00
PA-T3	Cisco Systems Inc.	PA-T3	Router Piggybacks	1	\$14,300.00
PWR-7200(included)	Cisco Systems Inc.	PWR-7200	PowerSupplies	1	\$0.00
S72C-12.0.3T(included)	Cisco Systems Inc.	S72C-12.0.3T	CommDev-SIW	1	\$0.00
					<u>Unit Price</u>
					<u>Quantity Price for 2</u>

MDF ROUTER

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
CISCO3640	Cisco Systems Inc.	CISCO3640	Routers	1	\$4,225.00
CAB-AC(included)	Cisco Systems Inc.	CAB-AC	Cables	1	\$0.00
MEM3600-8U32FS	Cisco Systems Inc.	MEM3600-8U32FS	Memory	1	\$975.00
MEM3640-32U128D	Cisco Systems Inc.	MEM3640-32U128D	Memory	1	\$3,744.00
NM-1FE-TX	Cisco Systems Inc.	NM-1FE-TX	RouterPlugins	1	\$1,300.00
NM-4T	Cisco Systems Inc.	NM-4T	RouterPlugins	1	\$1,950.00
NM-8T1-IMA	Cisco Systems Inc.	NM-8T1-IMA	RouterPlugins	1	\$4,550.00
NM-HDV-1T1-24	Cisco Systems Inc.	NM-HDV-1T1-24	RouterPlugins	1	\$4,810.00
S364AP-12.0.5T	Cisco Systems Inc.	S364AP-12.0.5T	CommDev-SIW	1	\$0.00
					<u>Unit Price</u>
					<u>Quantity Price for 27</u>

MDF SWITCH

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
WS-C6509	Cisco Systems Inc.	WS-C6509	LanSwitch	1	\$6,496.75
CAB-7513AC	Cisco Systems Inc.	CAB-7513AC	Cables	2	\$0.00
MEM-MSFC-128MB	Cisco Systems Inc.	MEM-MSFC-128MB	Memory	1	\$780.00
SC6MSFCC-12.0.3XE	Cisco Systems Inc.	SC6MSFCC-12.0.3XE	CommDev-SIW	1	\$0.00
SFC6K-SUP-5.3.1	Cisco Systems Inc.	SFC6K-SUP-5.3.1	CommDev-SIW	1	\$0.00
WS-CAC-1300W	Cisco Systems Inc.	WS-CAC-1300W	PowerSupplies	1	\$2,596.75
WS-CAC-1300W/2	Cisco Systems Inc.	WS-CAC-1300W/2	PowerSupplies	1	\$2,596.75

WS-Q5484	Cisco Systems Inc.	WS-Q5484	Piggybacks - Switches	10	\$3,250.00
WS-X6248-RJ-45	Cisco Systems Inc.	WS-X6248-RJ-45	Switch Plugins	4	\$33,787.00
WS-X6408-GBIC	Cisco Systems Inc.	WS-X6408-GBIC	Switch Plugins	2	\$12,993.50
WS-X6K-SUPIA-MSFC	Cisco Systems Inc.	WS-X6K-SUPIA-MSFC	Switch Plugins	2	\$38,993.50
			<u>Unit Price</u>		101,494.25
			<u>Quantity Price for 27</u>		2,740,344.75

Bill Of Materials For Voice, Video and Data Network - Page 2

PIX

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
PIX-520	Cisco Systems Inc.	PIX-520	Miscellaneous	1	\$2,340.00
ACC-PIX500-4.4(included)	Cisco Systems Inc.	ACC-PIX500-4.4	Miscellaneous	1	\$0.00
CAB-AC	Cisco Systems Inc.	CAB-AC	Cables	1	\$0.00
PIX-4FE	Cisco Systems Inc.	PIX-4FE	Miscellaneous	1	\$650.00
PIX-CONN-UR	Cisco Systems Inc.	PIX-CONN-UR	CommDev-SIW	1	\$11,700.00
SF-PIX-4.4	Cisco Systems Inc.	SF-PIX-4.4	CommDev-SIW	1	\$0.00
Unit Price					14,690.00
Quantity Price for 2					29,380.00

IP/TV

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
IPTV-3410-CTRL	Cisco Systems Inc.	IPTV-3410-CTRL	IP/TV Server	1	\$9,750.00
IPTV-3420-BCAST	Cisco Systems Inc.	IPTV-3420-BCAST	IP/TV Broadcast Server	1	\$9,750.00
Unit Price					19,500.00
Quantity Price for 4					78,000.00
IPTV-3430-ARCH	Cisco Systems Inc.	IPTV-3430-ARCH	IP/TV Archive Server	1	15,600.00
Unit Price					15,600.00
Quantity Price for 26					405,600.00

MDF CACHE ENGINE

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
CE-550	Cisco Systems Inc.	CE-550	Miscellaneous	1	7,796.75
CAB-AC	Cisco Systems Inc.	CAB-AC	Cables	1	.00
SF-CE500-2.0	Cisco Systems Inc.	SF-CE500-2.0	CommDev-SIW	1	.00
Unit Price					7,796.75
Quantity Price for 27					210,512.25

VOICE

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
MCS-7830	Cisco Systems Inc.	MCS-7830	Media Convergence Server	1	9,746.75
Unit Price					9,746.75
Quantity Price for 27					263,162.25
CAG-AT8	Cisco Systems Inc.	CAG-AT8	Gateway	1	3,246.75
Unit Price					3,246.75
Quantity Price for 27					87,662.25
DT-24+	Cisco Systems Inc.	DT-24+	Gateway	1	6,500.00
Unit Price					6,500.00
Quantity Price for 4					26,000.00

Bill Of Materials For Voice, Video and Data Network - Page 3

IDF SWITCH

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
WS-C4003-S1	Cisco Systems Inc.	WS-C4003-S1	LanSwitch	1	\$5,196.75
CAB-7KAC	Cisco Systems Inc.	CAB-7KAC	Cables	2	\$0.00
SFC4K-SUP-5.1.1	Cisco Systems Inc.	SFC4K-SUP-5.1.1	CommDev-S/W	1	\$0.00
WS-G5484	Cisco Systems Inc.	WS-G5484	Piggybacks - Switches	4	\$325.00
WS-X4008(included)	Cisco Systems Inc.	WS-X4008	PowerSupplies	1	\$0.00
WS-X4008/2	Cisco Systems Inc.	WS-X4008/2	PowerSupplies	1	\$646.75
WS-X4012(included)	Cisco Systems Inc.	WS-X4012	Switch Plugins	1	\$0.00
WS-X4232-GB-RJ	Cisco Systems Inc.	WS-X4232-GB-RJ	Switch Plugins	2	\$2,921.75
<u>Unit Price</u>					\$9,090.25
<u>Quantity Price for 60</u>					\$779,220.00

CLASSROOM SWITCH

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
WS-C3524-XL-EN	Cisco Systems Inc.	WS-C3524-XL-EN	LanSwitch	1	2,596.75
<u>Unit Price</u>					2,596.75
<u>Quantity Price for 500</u>					\$1,298,375.00

PHONES

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Device Type</u>	<u>Qty</u>	<u>Price</u>
CP-BUNDLE-25-12SP+	Cisco Systems Inc.	CP-BUNDLE-25-12SP+	(25) 12 SP+ IP Phones	1	\$8,511.75
<u>Unit Price</u>					\$8,511.75
<u>Quantity Price for 24</u>					\$204,282.00
CP-BUNDLE-25-30VIP	Cisco Systems Inc.	CP-BUNDLE-25-30VIP	(25) 30 VIP IP Phones	1	\$10,071.75
<u>Unit Price</u>					\$10,071.75
<u>Quantity Price for 4</u>					\$40,287.00

SOFTWARE

<u>Item Name</u>	<u>Total Quantity</u>	<u>Price</u>
Cisco Works 2000	2	12,993.50
HP OpenView	2	30,790.94
IPTV Viewer - Software and Licensing for up to 400 computers		
IPTV Viewer - Software and Licensing for up to 800 computers		
IPTV Viewer - Software and Licensing for District - unlimited users/PC's		

CARRIER TRANSPORT

<u>Item Name</u>	<u>1yr contract price</u>	<u>2yr contract price</u>	<u>3yr contract price</u>
(2) DS3 into District Office		See Attached List	
Point to Point - 2, T1 Connections from District Office to Each School		See Attached List	
Frame Relay - 2, T1 Connection from District Office to Each School		See Attached List	

SMARTNET MAINTENANCE - All Cisco Equipment

<u>Item Name</u>	<u>Vendor</u>	<u>Catalog Number</u>	<u>Terms</u>	<u>Price</u>
CON-MYSNT-PKG(x)	Cisco Systems	CON-MYSNT-PKG(x)	3 year	See List
CON -OS-PKG(x)	Cisco Systems	CON -OS-PKG(x)	1 year	See List

Specifications for Network Cabling Attachment F

Ameritech will be utilizing the work of a subcontractor to complete the Network Cabling portion of the proposal. Ameritech accepts full responsibility for the performance of the subcontract and guarantees that all work will meet the specifications outlined in this proposal. Ameritech accepts and will comply with all documents specifications and requirements.

Ameritech will be utilizing Phone Masters Limited to perform the subcontracting. Phone Masters Limited is an Ameritech Approved Subcontractor and an Authorized Distributor of Ameritech.

Ameritech has utilized Phone Masters Limited on several other E-Rate projects – all of which met both Ameritech's and the customer's expectations. Phone Masters has also performed work for East St. Louis School District both on its own and as a subcontractor of Ameritech. You may contact the following customers for references regarding Phone Masters Limited work:

Alton Community Unit School District
Rick Durbin
618-474-2600 Ext 618

Cahokia Unit School District
John Barr
618-332-3730

PART 1 - PRODUCTS

A. SUMMARY

1. The System offered and quoted, will incorporate all features and facilities listed in this specification. The NETWORK CABLING SYSTEM (NCS) will consist of any or all of the following subsystems:
 - a. Horizontal Cabling Subsystem
 - b. Backbone Cabling Subsystem
 - c. Work Area Subsystem
 - d. Telecommunications Closet/BDF
 - e. Network Center/MDF
 - f. Building Entrance
2. The system will:
 - a. Support analog and digital voice applications and telephony signaling, data local area networks, and broadband/baseband analog and digital video on a common cabling platform.
 - b. Cover its capacity and functionality with minimum components.
 - c. Coordinate the features of materials and equipment so they form an integrated system.
 - d. Match components and interconnections for optimum future performance.
 - e. Be flexible and capable of including new facilities or technologies as they become required or available.
 - f. Provide an open, standards-based platform for future growth and adaptation.

B. MANUFACTURERS

1. Subject to compliance with requirements, provide products by the following:
 - a. Cable and Cords:
 - 1) Lucent Technologies or Equivalent
 - b. Faceplates, Patch Panels, Terminations, Terminals, and Connector Components:
 - 1) Lucent Technologies or Equivalent
 - c. Warranty:
 - 1) Five Years Labor and Material

d. Non-Metallic Surface Mount Raceway:

- 1) Panduit
- 2) Wiremold
- 3) Ortronics

PART 2 – SYSTEM SPECIFICATIONS

A. HORIZONTAL CABLING SUBSYSTEM

1. The Horizontal Cabling provides connections from the headend cross-connect or distribution equipment rooms to the information outlets (I/O) in the work areas. It consists of the horizontal transmission media and the associated connecting hardware terminating this media and I/O in the work area. All horizontal cabling will be installed in a home run, star topology.

2. GENERAL

- 1) Contractor will supply horizontal cables to connect each information outlet to the headend subsystem.
- 2) Unless otherwise noted on the floor plans or within this document, the type of horizontal cables used for each information outlet/building control device will be one (1) run of 4-pair unshielded twisted pair (UTP).
- 3) All horizontal cable used in the project will be plenum-rated.
- 4) Unless otherwise noted on the floor plans or within this document, all terminations for 24-AWG copper cable will be:
 - Modular 8-position/8-conductor
 - Insulation Displacement Connection (IDC)
 - TIA/EIA 568-B wiring
 - Universal application/multi-vendor supportive accepting most phone and data plugs.
 - Faceplates or enclosures will be supplied and installed. Color to be approved by the Owner.

3. HARDWARE SPECIFICATIONS

- 1) Category 5 UTP Cabling – Plenum-rated
 - a) All plenum Category 5 Unshielded Twisted Pair (UTP) cable will have eight 24-AWG copper conductors twisted into pairs and insulated with FEP and sheathed with ECTFE. Category 5 UTP will meet or exceed the following specifications:
 - 4-pair Category 5 cabling

- UL Type CMP

Standard of Quality: Lucent Technologies 2061B+ cable required

2) Modular Category 5 UTP terminations:

- a) Terminate all Category 5 UTP cabling on 8-position/8- conductor modular outlets meeting or exceeding the following specifications:

Standard of Quality: Lucent Technologies MPS100BH required.

3) Modular Information Outlets Enclosures

- a) All work area UTP terminations will be enclosed in a surface-mounted plastic enclosure designed to support an all copper, all fiber, or mixed media environment.

Physical Specifications:

- Length: 6.9 in. (17.2 cm)
- Width: 5.6 in. (14.0 cm)
- Depth: 1.6 in. (4.10 cm)

Configuration:

- Provide and install with one blank panel and one panel equipped for four M-series UTP terminations and one blank dust cover.

Standard of Quality: Lucent Technologies 40A1 Multimedia Information Outlet required

B. BACKBONE CABLING

- 1. The backbone cabling subsystem provides interconnection between telecommunications closets, equipment rooms, and entrance facilities. It consists of backbone cabling, intermediate and main cross-connects, patch cables, mechanical terminations, and intermediate or distribution racks and cabinets.

a. GENERAL

- 1) All backbone fiber optic cable used in the project will be plenum-rated.
- 2) All backbone fiber optic cable used in the project will be terminated on the specified equipment.
- 3) All backbone UTP cable used in the project will be plenum-rated.

- 4) All backbone UTP cable will be terminated on the specified 110 Jack Panel equipment.
- 5) For backbone Category 5 connections to electronic hardware, Contractor will provide one Category 5 UTP patch cable for each work are enclosure + 15%.
- 6) For backbone fiber optic connections to electronic hardware, Contractor will provide multimode fiber optic patch cables for all backbone fiber terminations (both ends) + 15%.

b. HARDWARE SPECIFICATIONS

1) Backbone multimode fiber optic cables – Plenum

a) Backbone fiber will meet or exceed the following specifications:

Physical Specifications:

- Fiber Dimensions:
62.5nm – core
125nm – cladding
250nm – coating
900mm – buffering
- Cable Minimum Bending Radius:
During Installation: 20 times cable diameter
After Installation: 10 times cable diameter

Optical Specifications:

- Maximum Fiber Loss: 4.0 dB/km at 850nm
(typical range 3.0 to 3.5 dB/km)
- Maximum Fiber Loss: 1.5 dB/km at 1300nm
(typical range 0.5 to 0.8 dB/km)
- Minimum Bandwidth: 200 MHz at 850nm
- 500 MHz at 1300nm
- Numerical Aperture: 0.275
- UL Listed Type OFNP
- ISO 9001 Certified Manufacturer
- 6-strand fiber optic cable

Standard of Quality: Lucent Technologies Accumax Building
Cable LGBC-006D-LPX required.

2) Backbone UTP – Plenum (voice alternate)

a) Backbone Category 3 UTP will meet or exceed the following specifications:

Specifications:

- Twisted Pairs: 50
- EIA/TIA Category: 3
- UL Listed Type CMP/MPP

Standard of Quality: Lucent Technologies Plenum 2010 Cable
Required

C. WORK AREA SUBSYSTEM

1. The connection between the information outlet and the station equipment in the work area is provided by the Work Area Subsystem. It consists of cords, adapters, and other transmission electronics.

a. GENERAL

- 1) Contractor will supply all Work Area Subsystem wiring and/or cords that connect terminal devices to information outlets. This includes mounting cords and connectors to provide data connectivity to data terminal devices.
- 2) For the work area, Contractor will provide one Category 5 UTP patch cable for each work area enclosure + 15%.

b. HARDWARE SPECIFICATIONS

- 1) Category 5 Patch Cordage
 - a) Patch cords will be 24-AWG data cables with eight conductors. Both ends of the cord will be equipped with modular 8-position/8-conductor (RJ45-Type) plugs. Patch cords will meet or exceed the following specifications:

Specifications:

- Gauge: 24-AWG stranded wire
- Pair Size: Four (4)
- Length: 10 ft. (3.05 m)
- UL Listed Type CM

Standard of Quality: Lucent Technologies D8SA required.

D. TELECOMMUNICATIONS CLOSET/BDF

1. Telecommunications closets are used to connect backbone cabling from the MDF to electronic hardware and horizontal cabling. The telecommunications closet subsystem consists of terminating hardware, for backbone and horizontal fiber and copper cables, patch cabling and cabinet/rack mounts.
2. GENERAL
 - a. Contractor will supply all Work Area Subsystem wiring and/or cords that connect Terminal Devices to information outlets. This includes mounting cords and connectors to provide data connectivity to data terminal devices.
 - b. For the work area, Contractor will provide one (1) Category 5 patch cable for each work area enclosure + 15%.
 - c. Patch panel installations will contain a retraining trough between every 100 pair termination block.
 - d. The Contractor will provide any necessary connections, connector barrels, screws, anchors, clamps, tie wraps, distribution rings, wire molding, miscellaneous grounding and support hardware, etc., necessary to facilitate the installation of the system(s).
 - e. Contractor will supply cross-connect wire, patch cords and fiber patch cords for cross-connection and inter-connection of termination blocks and lightguide interconnection units.
 - f. Contractor will supply patch cord (factory assembled Plug-ended jumpers) for all patch panel terminal blocks
 - g. The patch cord will be available in 1, 2, 3, and 4 pair versions with lengths of 2 through 9 feet (or custom length as required) and will meet or exceed the following electrical, mechanical and next specifications listed below:
 - h. Contractor will supply cross-connected wire, patch cords and fiber patch cords for connections between the network center and backbone subsystem.
 - i. When required by local code, provide a telecommunications Bonding Backbone utilizing a #6 AWG or larger bonding conductor that provides direct bonding between equipment rooms and telecommunications closets. This is part of the grounding and bonding infrastructure of the telecommunications pathways and spaces in the building structure, and is independent of equipment or cable.
 - j. Communication bonding and grounding will be in accordance with the NEC and NFPA. Horizontal cables will be grounded in compliance with the ANSI/NFPA 70 and local requirements and practices.

- k. Contractor will supply lightning protectors and wire used to ground the equipment for all cables exposed to potential lightning strikes.
- l. The Contractor will complete the termination of all transmission media in accordance with current industry standards (BICSI). The appropriate equipment will be supplied to make the complete Communications System functional and provide protection for the transmission media used.
- m. All Distribution cabinets/BDF hardware will be cabinet mounted in 48" enclosures.
- n. Cabling entering cabinets will be supported to prevent sagging and protected from abrasion, bends, kinks and other damage through the use of D-rings and raceway for routing, fitted gasket materials for cabinet penetrations and innerduct protection. Additional materials and techniques may be required.

1. HARDWARE SPECIFICATIONS

o. Distribution Closet/BDF Cabinets

Physical Specifications:

- Dimensions: 48.00" H x 25.00" W x 26.00" D
- Floor mounted
- EIA 19" rack mounting
- Solid side panels
- Plexiglas front door with lock
- Adjustable rubber feet (set of 4 each cabinet)
- Color, blue, gray or white available with wood grain or black trim (color approved by Owner before ordering)
- EIA 19" front and rear mounting sliding tray (Model 7206 FRSL-A, one for each cabinet).

Standard of Quality: Great Lakes GL 480

p. Backbone Copper Termination Block

- 1) The termination block for backbone copper cabling will provide both 110 and 8-position/8 conductor interface options for cross connects between backbone cabling and horizontal cabling. The termination block will meet or exceed the following specifications:
 - IDC termination to 8-pin modular jack via printed wiring board
 - EIA 19" rack mounting
 - (UL) listed